

REMARKS

Claims 1-3, 6-8, 10-19, 21-26, 28, 29, 31, 34, 36-38, 40, 41 and 46 are presently pending for consideration in the present application. Claims 4, 5, 9, 20, 27, 30, 32, 33, 39 and 42-45 have been cancelled without prejudice, and claim 35 was previously cancelled. Claims 1-3, 6-8, 11-17, 21, 22, 24-26, 34, 36-38, 40, 41 and 46 have been amended and are fully supported by the originally filed specification, claims, and drawings. It is respectfully submitted that no new matter has been added. Applicant reserves the right to file one or more continuing and/or divisional applications in which non-elected, withdrawn and/or cancelled claims would be prosecuted.

REJECTIONS UNDER 35 U.S.C. §§ 102/103 SHOULD BE WITHDRAWN

Claims 26-29, 31 and 33 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,113,637 to Gill et al. ("Gill"). Claims 1-5, 9, 10 and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gill in view of U.S. Patent No. 6,749,635 to Bryan ("Bryan"). Claims 6-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gill and Bryan, in view of U.S. Patent No. 6,770,095 to Grinberg et al. ("Grinberg"). Claims 11-19, 21-22, 24-25, 40 and 46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gill, Bryan and Grinberg, and further in view of U.S. Patent No. 5,534,029 to Shima ("Shima"). Claims 23 and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gill, Bryan, Grinberg and Shima, and further in view of U.S. Patent No. 6,296,643 to Hopf et al. ("Hopf"). Claims 36-38 and 41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gill, Bryan, Grinberg and Shima, and further in view of U.S. Patent Publication No. 2002/0183761 to Johnson ("Johnson").

Amended independent claim 1 recites, *inter alia*, a vertebral arthroplasty prosthesis, comprising: a first support member having a first anterior-posterior and lateral pivotal axis, a second support member having a second anterior-posterior and lateral pivotal axis. Claim 1 further recites an articulation member including a first articulation portion having a first pivotal joint member in pivotal association with the first support member for pivoting at the first pivotal axis, and a second articulation portion having a second pivotal joint member in pivotal association with the second support member for pivoting at the second pivotal axis, wherein the first and second articulation portions are translatable with respect to each other to translate the

first and second support members and pivotal axes with respect to each other, wherein the first support member, articulation member, and second support member are configured for cooperatively supporting vertebrae on either side of the prosthesis of a spinal column; and wherein the prosthesis is configured such that, when implanted in the spinal column, the articulation member is disposed in a location corresponding to an intervertebral disk. Amended independent claim 12 recites similar recitations.

Gill describes an intervertebral joint prosthesis having a ball component for engagement with a first vertebra and a trough component for engagement with a second vertebra adjacent to the first vertebra is disclosed. (See Gill, Abstract). Gill does not describe first and second support members having a first anterior-posterior and lateral pivotal axis, and a second anterior-posterior and lateral pivotal axis, respectively, as recited in amended independent claims 1 and 12. Gill clearly describes a intervertebral joint that permits movement along one axis only. Therefore, Gill is slidable in only one direction. Gill does not describe movement along a anterior-posterior and lateral pivotal axis, as recite in independent claims 1 and 12. The cited references of Bryan, Shima and Grinberg also only allow movement along one axis, and do not allow sliding. Such a recitation as recited in claims 1 and 12 allows the prosthesis device to slide and pivot like a real vertebra, allowing for natural movement of the spine.

Further, Gill does not describe a first articulation portion having a first pivotal joint member in pivotal association with the first support member for pivoting at the first pivotal axis, and a second articulation portion having a second pivotal joint member in pivotal association with the second support member for pivoting at the second pivotal axis, wherein the first and second articulation portions are translatable with respect to each other to translate the first and second support members and pivotal axes with respect to each other, as recited in amended independent claims 1 and 12. As stated above, Gill does not describe movement along more than one axis.

Amended independent claims 1 and 12 further recite that the first and second support members and articulation member are configured for cooperatively supporting vertebrae on either side of the prosthesis of a spinal column, and that the prosthesis is configured such that, when implanted in the spinal column, the articulation member is disposed in a location corresponding to an intervertebral disk. Gill does not describe such a prosthesis.

Bryan describes a small profile, peanut spectacle-shaped prosthetic disc device is provided. (See Bryan, Abstract). Bryan also fails to describe the recitations of amended

independent claims 1 and 12 as described above. The additional cited references by the Examiner also fail to teach or suggest the recitations of amended independent claim 1, and the Examiner does not contend that they do.

Amended independent claim 40 recites, *inter alia*, an arthroplasty prosthesis comprising a vertebral body prosthetic portion configured for replacing at least one vertebral body of a patient, the body prosthetic portion having an upper body anterior-posterior and lateral pivotal axis and a lower body anterior-posterior and lateral pivotal axis, and upper and lower disk prosthetic portions having a upper and lower anterior-posterior and lateral pivotal axes. Claim 40 further recites that the upper disk prosthetic portion comprises an upper support member having an upper first anterior-posterior lateral pivotal axis, and an upper second articulation portion having a first pivotal joint member in pivotal association with the upper support member for pivoting at the first pivotal axis, and an upper second articulation portion having a second pivotal joint member in pivotal association with the vertebral body prosthetic portion for pivoting at the upper body pivotal axis. Claim 40 further recites that the lower disc prosthetic portion comprises a lower support member having a second anterior-posterior lateral pivotal axis, and a lower first articulation portion having a first pivotal joint member in pivotal association with the lower support member for pivoting at the second pivotal axis, a lower second articulation portion having a lower second pivotal joint member in pivotal association with the vertebral body prosthetic portion for pivoting at the lower body pivotal axis.

Bryan and Gill, individually or in combination, fail to teach or suggest these features. Grinberg describes an intervertebral motion disc having an articulation interface and a locking interface. (*See* Grinberg, Abstract). Shima describes an articulated vertebral body spacer constituted by a pair of upper and lower joint pieces to be inserted between vertebrae. (*See* Shima, Abstract). However, Shima does not describe the upper and lower support members having upper and lower first and second articulation portions, as recited in amended independent claim 40. Accordingly, these references, individually or in combination, fail to teach or suggest the recitations of amended independent claim 40.

Regarding the dependent claims, Applicant respectfully submits that the cited references, individually or in combination, fail to disclose, teach or suggest the recitations of the independent claims. Accordingly, because the dependent claims contain additional recitations, the dependent claims are at least allowable for the reasons as set forth above with respect to the independent claims.

Further, claim 26 has been amended to depend from independent claim 1. Therefore, claim 26 is allowable for at least all the reasons as set forth above with respect to independent claim 1. Further, claim 26 recites, *inter alia*, vertebral contacting surfaces disposed and oriented for positioning an apophyseal ring of the first bone with respect to the fastener mount portion in an attachment position for attaching the fastener from the fastener mount portion through the apophyseal ring to attach the first contacting member to the first bone. As set out in the specification of the present application, it is described that the apophyseal ring is the strongest part of the vertebral body and it ensures a strong, robust and immediate attachment of the prosthesis to the vertebra. Further, the cited references all show the device being inserted above the apophyseal ring, similar to the prior art described in the Declaration under 37 C.F.R. 1.132 by Brett A. Taylor, submitted with the Response to the Office Action dated September 17, 2008. Accordingly, claims 26 and 28, 29 and 31 (which depend from claim 26) are also patentable over the cited references.

Claim 6 recites that the first and second articulations portions are translatable with respect to each other to translate the first and second support members and pivotal axes with respect to each other substantially uncoupled from pivotal movement of the first and second support members. Claim 7 recites that the first and second pivotal joint members are configured to provide universal pivoting of the first and second support members about the first and second pivotal axes, respectively. Claim 8 recites that the support members have corresponding joint members that are associated with the first and second pivotal joint members to provide a ball and socket joint for pivoting about each of the first and second pivotal axes. The cited references of Gill, Bryan, Grinberg, Shima, Hopf and Johnson, individually or in combination, all fail to disclose, teach or suggest these recitations.

Further, claim 17 recites, *inter alia*, a key extending from one of the articulation members, and a keyway defined in the other articulation member in which the key is received for translational movement, the keyway having an edge wall disposed to block the translational movement of the key. These recitations are clearly shown in Fig. 2 and described in the specification. Shima, or any of the other cited references, clearly does not disclose, teach or suggest these recitations. The Examiner does not point out which prior art reference, if any, describes such a feature. Claims 18 and 19 further define the key and keyway, which the cited references fail to disclose, teach or suggest.

In view of the above, Applicant respectfully requests withdrawal of the 35 U.S.C. § 102(b) rejection of claims 26-29, 31 and 33 as being anticipated by Gill, the 35 U.S.C. § 103(a) rejection of claims 1-5, 9, 10 and 34 as being unpatentable over Gill in view of Bryan, the 35 U.S.C. § 103(a) rejection of claims 6-8 as being unpatentable over Gill and Bryan, in view of Grinberg, the 35 U.S.C. § 103(a) rejection of claims 11-19, 21-22, 24-25, 40 and 46 as being unpatentable over Gill, Bryan and Grinberg, and further in view of Shima, the 35 U.S.C. § 103(a) rejection of claims 23 and 39 as being unpatentable over Gill, Bryan, Grinberg and Shima, and further in view of Hopf, and the 35 U.S.C. § 103(a) rejection of claims 36-38 and 41 as being unpatentable over Gill, Bryan, Grinberg and Shima, and further in view of Johnson. Accordingly, Applicant respectfully requests allowance of claims 1-3, 6-8, 10-19, 21-26, 28, 29, 31, 34, 36-38, 40, 41 and 46.

Conclusion

In view of the foregoing, the entire application is now believed to be in condition for allowance, early notice of which would be appreciated. Should the Examiner not agree, then a personal or telephonic interview is respectfully requested to discuss any remaining issues in an effort to expedite the allowance of this application.

Respectfully submitted,

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Date


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